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| Unit QR: Day 1: Introduction to Quadratic Relations | |  |
| MO 20 min  A 110 min  C/D 20 min  150 min | Math Learning Goals   * Begin to build a collaborative learning community * Develop an understanding of the big ideas for quadratics * Establish connections between the big ideas, the curriculum, and lesson goals * Highlight the importance of being conscious and explicit about the instructional decisions made so that all students develop deeper understandings of the big ideas of mathematics, and their connection to the real world | Materials   * BLM QR.1.1, 2 * BLM QR.1.3 (NEED) * BLM QR.1.4, 5 * PPT * Tape, Chartpaper * Expectation strips * Sticky notes |
|  | Groups of Three 🡪 Activity  Distribute one card from BLM QR.1.1 to each participant and have them locate the other two people whose cards represent the same quadratic relationship.  After some groups have formed, set the cards from BLM QR.1.2 on tables and have the groups locate their corresponding algebra tile representation.  Groups of Three 🡪 Activity  Have each participant write two truths and a lie. In their triads, they share their three statements and their group mates guess which one is the lie.  Whole Group 🡪 Discussion  Have each group introduce themselves and then share one truth or one lie. Other participants can try to guess who said it and if it is true or false.  Individual 🡪 Anticipation Guide  Each participant completes BLM QR.1.3. | BLM QR.1.1 and BLM QR.1.2 need to be printed and cut into cards. (one copy)  BLM QR.1.3 and BLM QR.1.5: one per participant BLM QR.1.4: one per each group of three |
| Minds On… |
|  |
|  | Groups of Three 🡪 Activity  Each group completes BLM QR.1.4  Whole Group 🡪 Discussion  Have the group consolidate their thinking by creating one common BLM QR.1.4.  Whole Group 🡪 Presentation  Using the PowerPoint PPT, provide an overview of the Big Ideas for Quadratics.  Small Group 🡪 Activity  Form groups according to course (2P, 2D, 3M, 3U). Sort expectation strips according to big idea and post on chart paper.  Small Group 🡪 Activity  Form groups according to big idea and cluster the expectations according to content.  Whole Group 🡪 Discussion  Share out the clusters.  “How well do the big ideas encompass the expectations”  “Did you think any of the expectations fit under more than 1 big idea?”  “How do concepts develop over the grades”  “What other characteristics did you notice about your clusters?”  “Is there anything that we can now add to /remove from our group frayer model?”  Small Group 🡪 Activity  Each small group writes a lesson goal based on a topic of their choice. Write and post it near the cluster. |  |
| Action! |
|  |
|  | Whole Group 🡪 Gallery Walk  Using sticky notes, teachers provide feedback on lesson goals.  Individual 🡪 Exit Card  Individuals complete BLM QR.1.5 and drop it off on the way out. |  |
| Consolidate Debrief |
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|  | Home Activity or Further Classroom Consolidation |  |

QR.1.1: Minds On Cards

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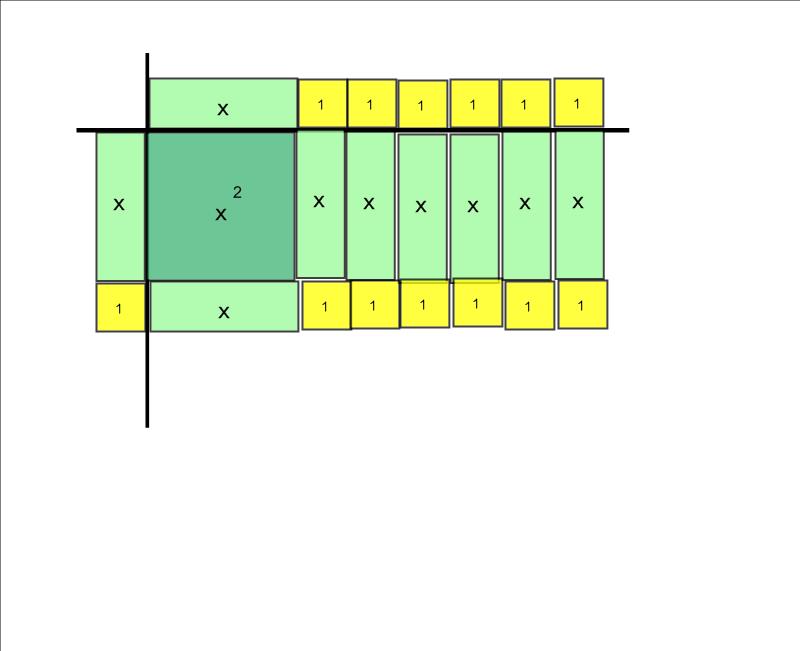
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| y=(x+1)(x+6) |  | y=(x+1)(x+3) |
| y=(x+4)(x+7) |  | y=x(x+5) |
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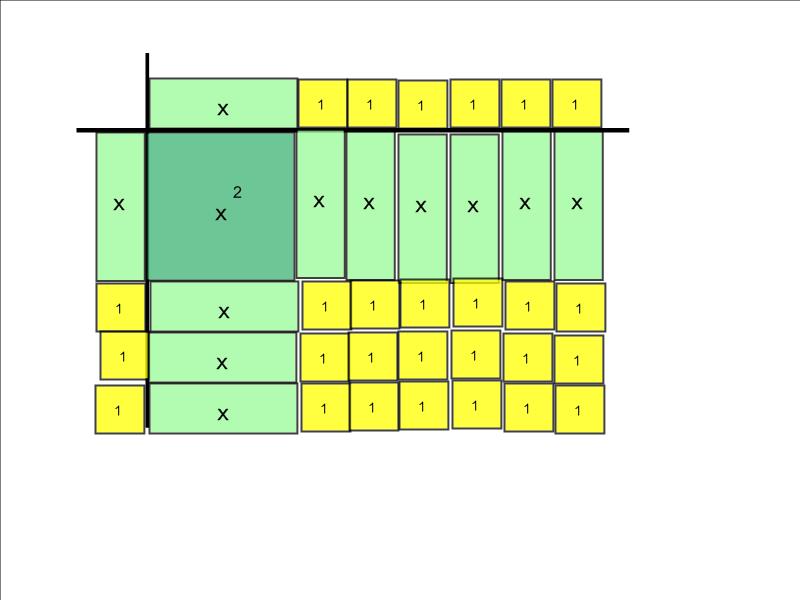
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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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| -10 | 28 |  | -10 | 40 |  | -10 | 36 |  | -10 | 63 |
| -9 | 18 |  | -9 | 28 |  | -9 | 24 |  | -9 | 48 |
| -8 | 10 |  | -8 | 18 |  | -8 | 14 |  | -8 | 35 |
| -7 | 4 |  | -7 | 10 |  | -7 | 6 |  | -7 | 24 |
| -6 | 0 |  | -6 | 4 |  | -6 | 0 |  | -6 | 15 |
| -5 | -2 |  | -5 | 0 |  | -5 | -4 |  | -5 | 8 |
| -4 | -2 |  | -4 | -2 |  | -4 | -6 |  | -4 | 3 |
| -3 | 0 |  | -3 | -2 |  | -3 | -6 |  | -3 | 0 |
| -2 | 4 |  | -2 | 0 |  | -2 | -4 |  | -2 | -1 |
| -1 | 10 |  | -1 | 4 |  | -1 | 0 |  | -1 | 0 |
| 0 | 18 |  | 0 | 10 |  | 0 | 6 |  | 0 | 3 |
| 1 | 28 |  | 1 | 18 |  | 1 | 14 |  | 1 | 8 |

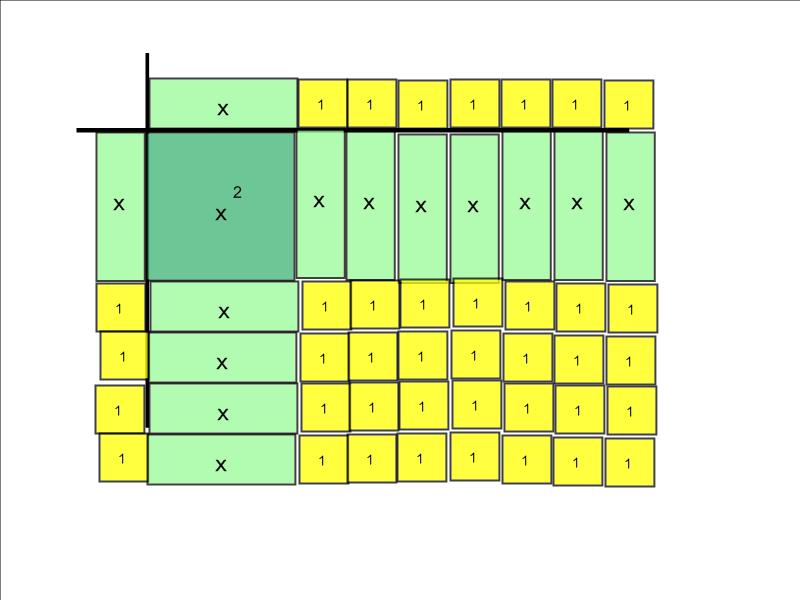
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| x | y |  | x | y |  | x | y |  | x | y |
| -10 | 18 |  | -10 | 50 |  | -10 | 16 |  | -10 | 70 |
| -9 | 10 |  | -9 | 36 |  | -9 | 7 |  | -9 | 54 |
| -8 | 4 |  | -8 | 24 |  | -8 | 0 |  | -8 | 40 |
| -7 | 0 |  | -7 | 14 |  | -7 | -5 |  | -7 | 28 |
| -6 | -2 |  | -6 | 6 |  | -6 | -8 |  | -6 | 18 |
| -5 | -2 |  | -5 | 0 |  | -5 | -9 |  | -5 | 10 |
| -4 | 0 |  | -4 | -4 |  | -4 | -8 |  | -4 | 4 |
| -3 | 4 |  | -3 | -6 |  | -3 | -5 |  | -3 | 0 |
| -2 | 10 |  | -2 | -6 |  | -2 | 0 |  | -2 | -2 |
| -1 | 18 |  | -1 | -4 |  | -1 | 7 |  | -1 | -2 |
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| 1 | 40 |  | 1 | 6 |  | 1 | 27 |  | 1 | 4 |

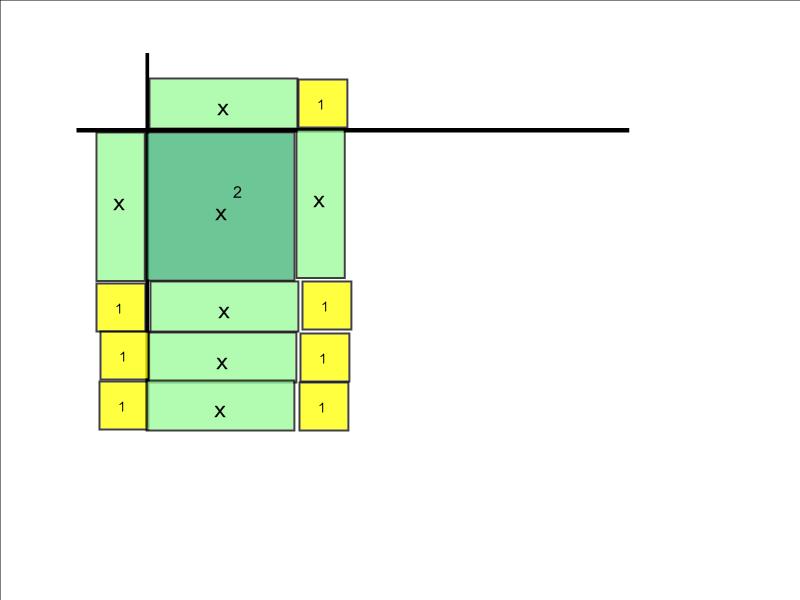
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| x | y |  | x | y |  |
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| -9 | 25 |  | -9 | 40 |  |
| -8 | 16 |  | -8 | 28 |  |
| -7 | 9 |  | -7 | 18 |  |
| -6 | 4 |  | -6 | 10 |  |
| -5 | 1 |  | -5 | 4 |  |
| -4 | 0 |  | -4 | 0 |  |
| -3 | 1 |  | -3 | -2 |  |
| -2 | 4 |  | -2 | -2 |  |
| -1 | 9 |  | -1 | 0 |  |
| 0 | 16 |  | 0 | 4 |  |
| 1 | 25 |  | 1 | 10 |  |

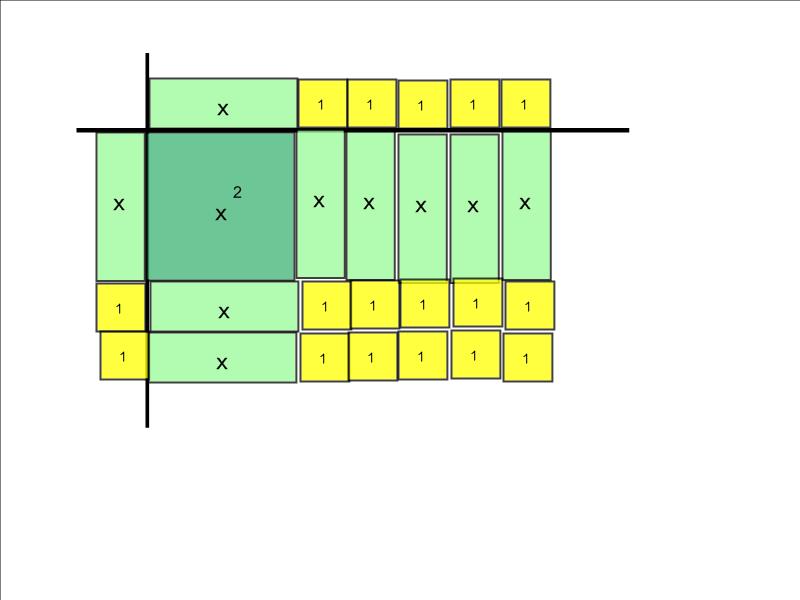
BLM QR.1.2 Algebra Tile Representations

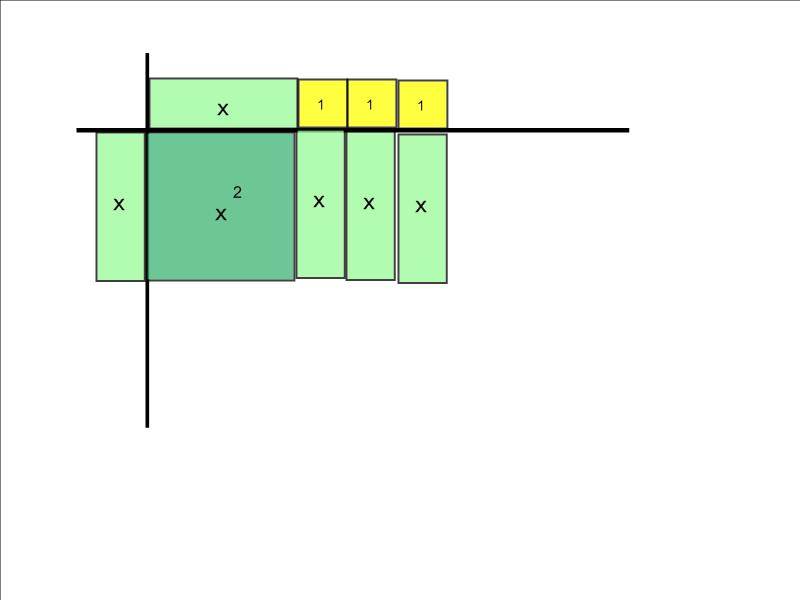


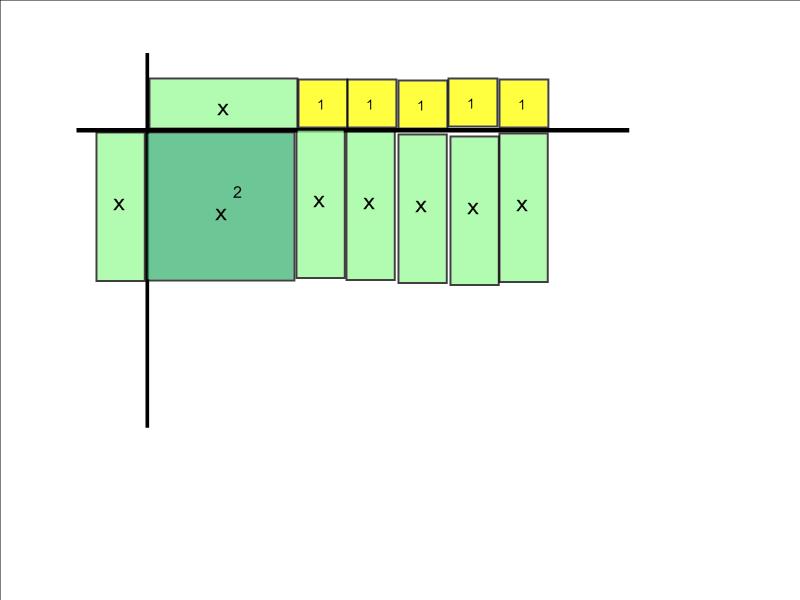
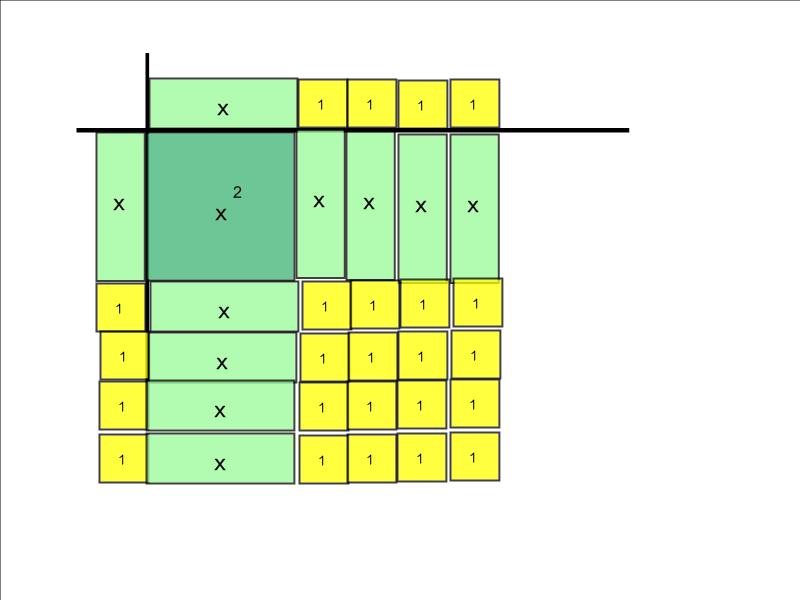
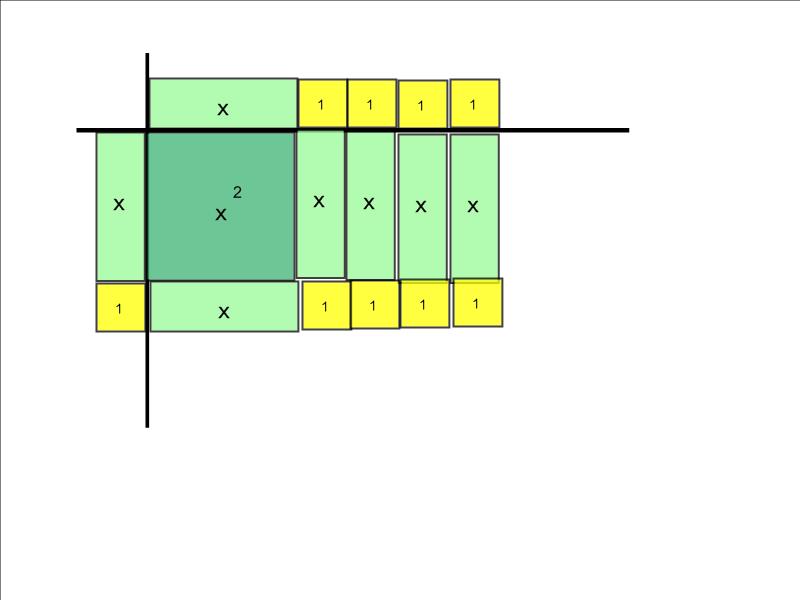
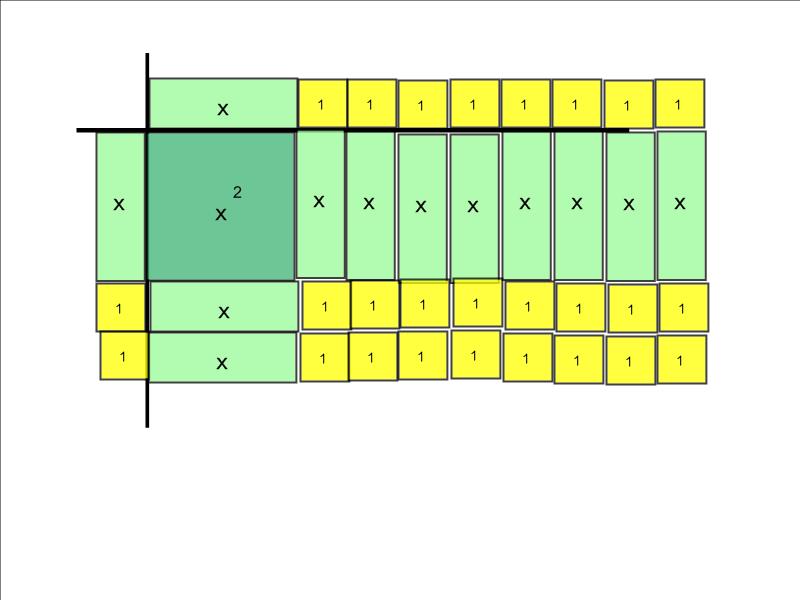










BLM QR.1.3 Anticipation Guide

BLM QR.1.4: Frayer Model: Quadratics

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| Definition (in your own words)  **Quadratic Relations** | Facts/Characteristics |
| Examples | Non-examples |

BLM QR.1.5: Exit Card

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| **Day 1 - Exit Card**  **I developed the following lesson goal today...**  **A question that I might ask of my students to address that lesson goal is...**  **When I teach factoring, my students seem to struggle most with...** |
| **Day 1 - Exit Card**  **I developed the following lesson goal today...**  **A question that I might ask of my students to address that lesson goal is...**  **When I teach factoring, my students seem to struggle most with...** |
| **Day 1 - Exit Card**  **I developed the following lesson goal today...**  **A question that I might ask of my students to address that lesson goal is...**  **When I teach factoring, my students seem to struggle most with...** |
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